

WHAT IS CLAIMED IS:

1. An in-line sander comprising:  
an elongated sander housing configured to be  
5 grasped by a user of the in-line sander;  
a sanding pad holding portion defining an  
outwardly facing channel that opens outward from the sander  
housing and that extends in a direction generally along a  
length of the sander housing, the channel being arranged  
10 and configured for receiving and holding a profiled sanding  
pad;  
a motor housed within the housing; and  
an in-line oscillating mechanism operatively  
coupled between the motor and the sanding pad holding  
15 portion, the in-line oscillating mechanism being arranged  
and configured to move the sanding pad holding portion in a  
linear oscillating motion, the linear oscillating motion  
being in the direction generally along the length of the  
housing.  
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2. The in-line sander of claim 1, wherein the  
profiled sanding pad is secured within the channel of the  
sanding pad holding portion, and the profiled sanding pad  
has, in a plane substantially perpendicular to the linear  
25 oscillating motion, a particular cross sectional profile  
which defines, substantially consistently along the length  
of the pad, a profile sanding area including portions not  
aligned on a single common plane.
- 30 3. The in-line sander of claim 2, wherein the  
profiled sanding pad is oriented such that a portion of the  
pad protrudes ahead of a front end of the sander housing  
throughout the linear oscillating motion.
- 35 4. The in-line sander of claim 2, wherein the  
sanding area of the profiled sanding pad includes a curved  
sanding surface.
5. The in-line sander of claim 2, wherein the  
40 sanding area of the profiled sanding pad includes a

plurality of planar sanding surfaces interconnected at discrete edges.

6. The in-line sander of claim 1, further comprising  
5 a plurality of profiled sanding pads adapted to be interchangeably secured within the channel of the sanding pad holding portion, each of the profiled sanding pads having a different cross sectional profile.

10 7. The in-line sander of claim 1, wherein the channel has a generally U-shaped cross section.

8. The in-line sander of claim 1, wherein the sanding pad holding portion includes a plurality of  
15 projections that extend into the channel, the projections being arranged and configured for assisting in retaining the profiled sanding pad within the channel.

9. The in-line sander of claim 8, wherein the  
20 projections comprise ridges.

10. The in-line sander of claim 9, wherein the ridges have an opposing relationship.

25 11. The in-line sander of claim 10, wherein the ridges are arranged in a substantially vertical orientation.

12. The in-line sander of claim 1, wherein the  
30 profiled sanding pad is frictionally retained within the channel of the pad holding portion.

13. The in-line sander of claim 12, wherein the profiled sanding pad has elastic characteristics, and  
35 portions of the profiled sanding pad are deformed when the pad is inserted in the channel such that the pad is frictionally retained in the channel.

14. The in-line sander of claim 13, wherein the pad  
40 holding portion includes projections that extend into the outwardly facing channel, the projections being arranged and configured to deform the portions of the profiled

sanding pad when the profiled sanding pad is inserted within the outwardly facing channel.

15. The in-line sander of claim 2, wherein the sanding pad holding portion comprises a pad frame on which the outwardly facing channel is defined, the pad frame including means for detachably coupling the pad frame to the in-line oscillating mechanism.

16. The in-line sander of claim 15, wherein the pad frame includes substantially pointed front and back portions, and substantially parallel portions located between the front and back portions.

17. The in-line sander of claim 1, wherein the channel of the profiled sanding pad holding portion is defined by opposing first and second holding members.

18. The in-line sander of claim 17, wherein the profiled sanding pad is more elastic than the first and second holding members, and the profiled sanding pad is arranged and configured to deform when inserted between the first and second members.

19. The in-line sander of claim 18, wherein the first and second holding members include a plurality of projections that extend into the channel, the projections being arranged for assisting in retaining the profiled sanding pad within the channel.

20. The in-line sander of claim 19, wherein the projections comprise ridges.